

C O V E R

S H E E T

FAX

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TO: Colleen Cooke
United States Patent and Trademark Office

FAX: (571) 273-1170

FROM: Scott R. Cox, Reg. No. 31,945

DATE: January 14, 2004

No. Pages (including cover): 25

Operator: Holly

Re: In appl. of: Yinyan Huang, et. al.

Serial No. 09/933,916

Examiner: Colleen Cooke

Filed: August 21, 2001

Group No.: 1725

For: METHOD FOR WASHCOATING A CATALYTIC MATERIAL ONTO A
MONOLITHIC STRUCTURE.

Attorney Docket No. P-1049 Confirmation No. 7748

Attached are the following:

INFORMATION FOR WITHDRAWAL OF ABANDONMENT TRANSMITTAL
STATEMENT IN SUPPORT OF A REQUEST FOR WITHDRAWAL OF
ABANDONMENT OF THE ABOVE-REFERENCED APPLICATION along
with EXHIBIT A AND EXHIBIT B.

If you should have any questions concerning this fax,
please contact me.

Scott R. Cox, Attorney

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Client: _____

Client #: 93789

(Ref.95-703 Pub.605)

KUKM 9-52

Practitioner's Docket No. P-1049

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: YINYAN HUANG, ET. AL.Application No.: 09 / 933,916 ✓ Group No.: 1725 ✓Filed: AUGUST 21, 2001 ✓ Examiner: COOKE, COLLEEN ✓For: METHOD FOR WASHCOATING A CATALYTIC MATERIAL ONTO
A MONOLITHIC STRUCTUREConfirmation No.: 7748 ✓Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450INFORMATION FOR WITHDRAWAL OF ABANDONMENT—PTO HAS NO
EVIDENCE THAT MAILED CORRESPONDENCE RECEIVED

NOTE: 37 C.F.R. § 1.8(b) states:

(b) In the event that correspondence is considered timely filed by being mailed . . . in accordance with paragraph (a) of this section, but not received in the Patent and Trademark Office, and the application is held to be abandoned or the proceeding is dismissed, terminated, or decided with prejudice, the correspondence will be considered timely if the party who forwarded such correspondence:

(1) Informs the Office of the previous mailing . . . of the correspondence promptly after becoming aware that the Office has no evidence of receipt of the correspondence;

(2) Supplies an additional copy of the previously mailed . . . correspondence and certificate; and

(3) Includes a statement which attests on a personal knowledge basis or to the satisfaction of the Commissioner to the previous timely mailing. . . .

(c) The Office may require additional evidence to determine if the correspondence was timely filed.

REQUEST

1. Applicant requests that the abandonment in this case be withdrawn.

CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. § 1.8(a))

I hereby certify that this correspondence is, on the date shown below, being:

MAILING

✓ deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450

FACSIMILE

✓ transmitted by facsimile to the Patent and Trademark Office, (703) 273-1170
571

Date: January 14, 2004Holly Hart

Signature

Holly Hart

(type or print name of person certifying)

(Information for Withdrawal of Abandonment—PTO Has No Evidence That Mailed Correspondence Received
[9-35]—page 1 of 3)

PR MPINESS F THIS SUBMISSION

This information is being submitted promptly after applicant has learned of the abandonment on the basis of:

- ☐ the Notice of Abandonment mailed by the PTO on _____
- ☐ applicant's own procedures in monitoring the progress of this case.
- XX Telephone call from Examiner Cooke**

SUBMISSION**2. Submitted herewith is:**

(check and complete each appropriate item below)

- ☒ A copy of the ~~page 6003~~ response mailed on 9/16/03, showing a Certificate of Mailing executed on 9/16/03.
- ☒ A copy of the post card identifying the papers filed and showing the U.S. PTO receipt stamp dated 9/22/03.

NOTE: "A post card receipt which itemizes and properly identifies the papers which are being filed serves as prima facie evidence of receipt in the PTO of all the items listed thereon on the date stamped thereon by the PTO." § 504, M.P.E.P., 7th Edition.

- ☒ A copy of the complete response previously filed.
- ☐ A copy of the cancelled check(s) referring to the response identified above.
- ☐ A copy of the attorney's Deposit Account Statement, in which the item corresponding to the response referred to above is noted.

STATEMENT**3. Attached hereto is a statement attesting to the timely transmission of the correspondence referred to above based on:**

- ☒ personal knowledge
- ☒ a showing believed to be satisfactory to the Commissioner

4. Please proceed with further examination of this application on the basis of:

- ☒ The original papers filed, which have now reached the appropriate area of the PTO.

AND/OR

- ☒ The attached copy of the papers originally filed.

REQUEST FOR WITHDRAWAL OF ABANDONMENT**5. Acknowledgement of the active status of this application is respectfully requested.**

(Information for Withdrawal of Abandonment—PTO Has No Evidence That Mailed Correspondence Received [9-35]—page 2 of 3)

(ReL95-7/03 Pub.605) **FORM 9-35** 9-225

Reg. No.: 31,945

Tel. No.: (502) 589-4215

Customer No.:



SIGNATURE OF PRACTITIONER

Scott R. Cox

(type or print name of practitioner)

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P.O. Address

Louisville, Kentucky 40202

(Information for Withdrawal of Abandonment—PTO Has No Evidence That Mailed Correspondence Received
[9-35]—page 3 of 3)

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re application of: :
Yinyan Huang, et. al. :
Serial No. 09/933,916 : Art Unit: 1725
Filing Date: August 21, 2001 : Examiner: Cooke, Colleen
Attorney Docket No. P-1049 : Confirmation No. 7748
For: METHOD FOR WASHCOATING A :
CATALYTIC MATERIAL ONTO :
A MONOLITHIC STRUCTURE :

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

STATEMENT IN SUPPORT OF A REQUEST FOR WITHDRAWAL
OF ABANDONMENT OF THE ABOVE-REFERENCED APPLICATION.

Applicants filed the above-referenced patent application with the United States Patent and Trademark Office on August 21, 2001, which was assigned Serial No. 09/933,916. An Office Action was mailed from the United States Patent and Trademark Office on June 17, 2003. The applicants filed a Response to that Office Action by mail dated September 16, 2003, (the "Response"), a copy of which is attached as Exhibit A. The last page of that Response, page 10, contains a Certificate of Service, whereby applicants' counsel's secretary, Holly Hart, certified that the Response was properly deposited with the United States Postal Service as First Class Mail

on September 16, 2003. Note also on the front page of the transmittal documents which accompanied the Response a second Certification of mailing by Holly Hart certifying that the Response was timely deposited in the U.S. Mail on September 16, 2003.

In addition to the filing of the Response with transmittal with the USPTO properly using the U.S. Mail, a post card was sent with the Response to the United States Patent and Trademark Office requesting acknowledgment of receipt of the Response. The original of that Post Office Card, stamped by the USPTO on September 22, 2003, was received by applicants' counsel. A copy of the front and back of that Card is attached as Exhibit B. Pursuant to MPEP 503, this Post Card is *prima facie* evidence of receipt in the USPTO of all the items listed thereon on the date stamped thereon by the USPTO. Thus, pursuant to MPEP 503 *prima facie* evidence exists that the Response was properly mailed and received by the USPTO.

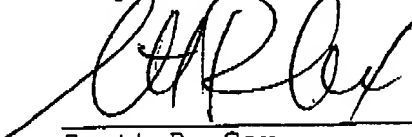
In December of 2003, applicants' counsel received a telephone call from Examiner Cooke requesting information as to whether a response to the Office Action dated June 17, 2003 had been filed with the USPTO. Applicants' counsel advised Examiner Cooke of the mailing of the Response dated September 16, 2003. As the Examiner had not received that document, the Examiner advised that the application had technically been abandoned. To overcome this abandonment, the Examiner suggested that counsel submit a Request for Withdrawal of the Abandonment of the Application. This

Statement is being submitted to support applicants' request for withdrawal of the abandonment of this application.

CONCLUSION

The applicants believe that sufficient grounds have been provided to support their request for withdrawal of the abandonment of the above-referenced application and, by these documents, the applicants request such withdrawal. If there are any additional information needed, please contact applicants' counsel.

Respectfully submitted,



Scott R. Cox
Reg. No. 31,945
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400 West Market Street, Suite 2200
Louisville, Kentucky 40202

CERTIFICATE OF SERVICE

I hereby certify that this correspondence is being deposited with the United States Postal Service as ~~First Class Mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.~~ As a facsimile to Examiner Colleen Cooke at facsimile number 571-273-1170.

Date: January 14, 2004

Nolly Hart

SRC:hh
C:\WP\PAT\F1049.2RE\93789

EXHIBIT A

(Rel. 95-7/03 Pub. 605)

FORM 9-19

9-139

Practitioner's Docket No. P-1049**PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**In re application of: Yinyan Huang, et.al. ✓Application No.: 09 / 933,916 ✓ Group No.: 1725 ✓Filed: August 21, 2001 ✓ Examiner: Cooke, Colleen ✓For: METHOD FOR WASHCOATING A CATALYTIC MATERIAL ONTO A ✓
MONOLITHIC STRUCTUREConfirmation No.: 7748 ✓Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**AMENDMENT TRANSMITTAL****WARNING:** Failure to file a complete response in compliance with § 1.135(c) leads to a reduction in patent term adjustment - See § 1.704(c)(7).

1. Transmitted herewith is an amendment for this application.

STATUS

2. Applicant is

- ☐ a small entity. A statement:
- ☐ is attached.
- ☐ was already filed.
- ☒ other than a small entity.

CERTIFICATION UNDER 37 C.F.R. §§ 1.8(a) and 1.10*
(When using Express Mail, the Express Mail label number is mandatory;
Express Mail certification is optional.)

I hereby certify that, on the date shown below, this correspondence is being:

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37 C.F.R. § 1.8(a)

37 C.F.R. § 1.10 *

- ☒ with sufficient postage as first class mail. ☐ as "Express Mail Post Office to Addressee"
Mailing Label No. _____ (mandatory)

TRANSMISSION

- ☐ facsimile transmitted to the Patent and Trademark Office, (703) _____

Signature

Holly Hart

(type or print name of person certifying)

Date: September 16, 2003

* Only the date of filing (§ 1.6) will be the date used in a patent term adjustment calculation, although the date on any certificate of mailing or transmission under § 1.8 continues to be taken into account in determining timeliness. See § 1.703(f). Consider "Express Mail Post Office to Addressee" (§ 1.10) or facsimile transmission (§ 1.6(d)) for the reply to be accorded the earliest possible filing date for patent term adjustment calculations.

EXTENSION OF TERM

NOTE: *"Extension of Time in Patent Cases (Supplement Amendments) — If a timely and complete response has been filed after a Non-Final Office Action, an extension of time is not required to permit filing and/or entry of an additional amendment after expiration of the shortened statutory period.*

If a timely response has been filed after a Final Office Action, an extension of time is required to permit filing and/or entry of a Notice of Appeal or filing and/or entry of an additional amendment after expiration of the shortened statutory period unless the timely-filed response placed the application in condition for allowance. Of course, if a Notice of Appeal has been filed within the shortened statutory period, the period has ceased to run." Notice of December 10, 1985 (1061 O.G. 34-35).

NOTE: See 37 C.F.R. § 1.645 for extensions of time in interference proceedings, and 37 C.F.R. § 1.550(c) for extensions of time in reexamination proceedings.

NOTE: 37 C.F.R. § 1.704(b) ". . . an applicant shall be deemed to have failed to engage in reasonable efforts to conclude processing or examination of an application for the cumulative total of any periods of time in excess of three months that are taken to reply to any notice or action by the Office making any rejection, objection, argument, or other request, measuring such three-month period from the date the notice or action was mailed or given to the applicant, in which case the period of adjustment set forth in § 1.703 shall be reduced by the number of days, if any, beginning on the day after the date that is three months after the date of mailing or transmission of the Office communication notifying the applicant of the rejection, objection, argument, or other request and ending on the date the reply was filed. The period, or shortened statutory period, for reply that is set in the Office action or notice has no effect on the three-month period set forth in this paragraph."

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. § 1.136 apply.

(complete (a) or (b), as applicable)

- (a) ☐ Applicant petitions for an extension of time under 37 C.F.R. § 1.136 (fees: 37 C.F.R. § 1.17(a)(1)-(4) for the total number of months checked below:

Extension (months)	Fee for other than small entity	Fee for small entity
<input type="checkbox"/> one month	\$ 110.00	\$ 55.00
<input type="checkbox"/> two months	\$ 410.00	\$ 205.00
<input type="checkbox"/> three months	\$ 930.00	\$ 465.00
<input type="checkbox"/> four months	\$ 1,450.00	\$ 725.00

Fee: \$_____

If an additional extension of time is required, please consider this a petition therefor.

(check and complete the next item, if applicable)

- ☐ An extension for _____ months has already been secured. The fee paid therefor of \$_____ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$_____

OR

- (b) ☒ Applicant believes that no extension of term is required. However, this is a conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

(Amendment Transmittal [9-19]—page 2 of 4)

(Rel. 95-7/03 Pub. 605)

FORM 9-19

9-141

FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. § 1.16(b)-(d)) has been calculated as shown below:

(Col. 1)		(Col. 2)		(Col. 3)		SMALL ENTITY		OTHER THAN A SMALL ENTITY	
CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO PREVIOUSLY PAID FOR		PRESENT EXTRA		ADDIT. FEE		ADDIT. FEE	
TOTAL		MINUS		=		x\$9 = \$		x\$18 = \$	
INDEP.		MINUS		=		x\$42 = \$		x\$84 = \$	
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEP. CLAIM						x\$140 = \$		+ \$280 = \$	
						TOTAL ADDIT. FEE \$		OR TOTAL ADDIT. FEE \$	

* If the entry in Col. 1 is less than entry in Col. 2, write "0" in Col. 3.

** If the "Highest No. Previously Paid For" IN THIS SPACE is less than 20, enter "20."

*** If the "Highest No. Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest No. Previously Paid For" (Total or indep.) is the highest number found in the appropriate box in Col. 1 of a prior amendment or the number of claims originally filed.

WARNING: "After final rejection or action (§ 1.113) amendments may be made cancelling claims or complying with any requirement of form which has been made." 37 C.F.R. § 1.116(a) (emphasis added).

(complete (c) or (d), as applicable)

(c) ☒ No additional fee for claims is required.

OR

(d) ☐ Total additional fee for claims required \$ _____.**FEE PAYMENT**☐ Attached is a ☐ check ☐ money order in the amount of \$ _____.☐ Authorization is hereby made to charge the amount of \$ _____.☐ to Deposit Account No. _____.☐ to Credit card as shown on the attached credit card information authorization form PTO-2038.**WARNING:** Credit card information should not be included on this form as it may become public.☐ Charge any additional fees required by this paper or credit any overpayment in the manner authorized above.

(Amendment Transmittal [9-19]—page 3 of 4)

FEE DEFICIENCY

NOTE: If there is a fee deficiency and there is no authorization to charge an account, additional fees are necessary to cover the additional time consumed in making up the original deficiency. If the maximum, six-month period has expired before the deficiency is noted and corrected, the application is held abandoned. In those instances where authorization to charge is included, processing delays are encountered in returning the papers to the PTO Finance Branch in order to apply these charges prior to action on the cases. Authorization to charge the deposit account for any fee deficiency should be checked. See the Notice of April 7, 1986, (1065 O.G. 31-33).

6. ☒ If any additional extension and/or fee is required, charge Account
No. 03-3420

AND/OR

- ☒ If any additional fee for claims is required, charge Account
No. 03-3420

Reg. No.: 31,945

Tel. No.: (502) 589-4215

Customer No.:



SIGNATURE OF PRACTITIONER

Scott R. Cox
(type or print name of practitioner)

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Louisville, Kentucky 40202

(Amendment Transmittal [9-19]—page 4 of 4)

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re application of: :
Yinyan Huang, et. al. :
Serial No. 09/933,916 : Art Unit: 1725
Filing Date: August 21, 2001 : Examiner: Cooke, Colleen
Attorney Docket No. P-1049 : Confirmation No. 7748
For: METHOD FOR WASHCOATING A :
CATALYTIC MATERIAL ONTO :
A MONOLITHIC STRUCTURE :

Mail Stop Non Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

This is a Response to the Office Action of the United States Patent and Trademark Office dated June 17, 2003.

The USPTO rejected Claims 1 - 7 and 9 - 19 under 35 USC Section 102(b) or, in the alternative, under 35 USC Section 103(a) as obvious over Kawabata et. al., JP 01135540 A. In addition, the USPTO rejected Claims 8 and 20, under 35 USC Section 103 based on Kawabata et. al. in view of Becue et. al., US Patent No. 6,551,564. The applicants respectfully traverse these rejections.

REMARKS

The applicants have discovered a new method for washcoating a monolithic catalyst utilizing a specialized dual sol binder system, wherein the binder system is comprised of a particular blend of an alumina sol and a silica sol containing a relatively high quantity of alumina. This blend produces a binder system with extraordinary adhesion qualities, thereby producing a longer lasting NO_x removal system. In contrast with the teachings of the prior art, the applicants have discovered that binder systems which exhibit high adhesion characteristics are produced when the ratio of the silica to the alumina in the dual sol binder system is surprisingly low i.e. from 6:1 to 1:3. The composition of this dual sol binder system is unique and not taught by the prior art.

Kawabata et. al.

The primary reference cited by the USPTO is Kawabata et. al. This patent discloses a manufacturing method for preparing an exhaust gas purifying catalyst, which comprises mixing zeolite, a silica sol, an alumina sol, and water to form a slurry and adhering the slurry to a carrier. The primary object of Kawabata et. al. is to produce an exhaust gas purifying catalyst "...which can remove NO_x through reduction even at the lean side and can sufficiently eliminate all harmful components in a large region at the lean side from the theoretical air fuel ratio." (Page 3, lines 6 - 8).

While the processes that are used by both Kawabata et. al. and the applicants require the presence of a dual sol binder system, there are important distinctions between these two dual sol binders. The most obvious distinction is a dramatic difference in the ratio of the silica sol to the alumina sol that is utilized. Kawabata et. al. discloses that the Si/Al molar ratio should "not [be] very different from the Si/Al ratio of the zeolite." (Page 3, line 21.) See also page 6, last three lines. The broadest range of molar ratios disclosed by Kawabata et. al. for Si to Al is "1/3 - 3 times the Si/Al ratio of the zeolite." (Page 3, lines 21 - 23.) Thus, when the Si/Al molar ratio of the zeolite is 40 (as in Application Example 1), the range of acceptable Si/Al molar ratios for the dual sol binder is from 13.3 (1/3x) to 120 (3x). In the practical examples within Kawabata et. al contained in Application Examples 1, 2 and 3, the binder mixtures had Si/Al molar ratios which were equal to the Si/Al molar ratios present in the zeolite. Thus, in Application Example 1, the Si/Al molar ratio of the binder mixture was 40. In Application Example 2, the Si/Al molar ratio of the binder mixture was 19. In Application Example 3, the Si/Al molar ratio of the binder mixture was 26.

In contrast, the Si/Al molar ratio in the silica sol/alumina sol blend as claimed in the Application is significantly lower. Before the disclosure of Kawabata et. al. can be compared with the disclosure in the claims, it is critical to first note that the

ratio that is claimed in the Application for the components of the binder system is of the oxide, "silica", (not elemental silicon) to the oxide, "alumina" (not elemental aluminum.) The claimed ratio range between the silica and alumina in Claim 1 the broadest range is from 6:1 to about 1:3. To convert this range from an oxide ratio to the molar ratio that is utilized in Kawabata et. al. requires a comparison of the molecular weight of silica, (60), and the molecular weight of alumina, (102). When the ratio of the silica:alumina is 6:1, as claimed in Claim 1 of the Application this correlates to a molar ratio of Si:Al in the binder material of about 3.6:1 (6x60 (silica molecular weight) to 1x102 (alumina molecular weight) or 360:102 which produces a ratio of about 3.6:1.)

Of the zeolitic materials which are disclosed in Kawabata et. al., the lowest silicon/aluminum molar ratio of the zeolitic material that is disclosed is 19:1 in Application Example 2. Using the "1/3 - 3X" silicon:aluminum molar ratio that is disclosed in Kawabata et. al. on page 3, line 22, the smallest silicon:aluminum molar ratio that would be permitted by Kawabata et. al. is 1/3 of 19 or 6.333:1. This ratio is over 2 times the maximum ratio claimed by the applicants. The lowest permitted Si/Al molar ratio of the other Application Examples is 13.3 (Application Examples 1 and 4 i.e. $40 \div 3$) or 8.67 (Application Example 3 i.e. $26 \div 3$). Accordingly, there is no teaching in Kawabata et. al. of the use of any dual sol mixture that contains a Si:Al

molar ratio that is within the range that is claimed in any of the claims of the Application. The inventors in Kawabata et. al. clearly did not recognize that the ratio of the Si/Al in the binder must be low to produce a product that adheres well. Thus, rejection of the Claims under 35 USC §102 is not appropriate.

This failure to recognize the need for a low Si:Al ratio in the dual sol binder was not for lack of effort. In fact, an analysis of the preferred Si/Al molar ratio of the binder systems was specifically conducted by Kawabata et. al. in application Example 9 and Comparison Example 2 on pages 6 and 7 as follows:

To observe the effect of the mixing ratio between the alumina sol and silica sol in the binder on the catalytic activity, 6 types of binders with Si/Al ratios of 0, 50, 100, 200, 400, and 1000 are prepared. (page 6)

At the end of that paragraph Kawabata et. al. stated the following conclusion about the choice of molar ratios of Si:Al in the binder system:

It can be understood that catalysts having a Si/Al ratio of the binder close to the Si/Al ratio of 40 of the zeolite display an excellent purification performance.

In fact, on Table 2 on page 7 of Kawabata et. al., the two best performing blends of silica sol and alumina sol for the removal of NO_x had Si/Al molar ratios of 50 and 100 while the molar ratio of the silicon to aluminum in the zeolite was only 40. From a review of Table 2, page 7, it is clear that Kawabata et. al. teach that the best performance of an exhaust gas purifying catalyst to remove

of NO_x occurs when the Si/Al molar ratio of the binder mixture was 100, which is 2 1/2 times the ratio of the Si/Al molar ratio in the zeolite and over 30 times the highest molar ratio of Si/Al permitted by the claims of the Application. Further, the example in Kawabata et. al. teaches that better binders are produced when the molar ratio of Si/Al in the binder is greater than the molar ratio of Si/Al in the zeolite. (Compare the performance of the binder system in Kawabata et. al. with an Si/Al molar ratio of 50:1 (60% NO_x removal) with the performance of the binder system with an Si/Al molar ratio of 100:1 (71% NO_x removal)). The opposite result is taught by the applicants' invention. A person skilled in the art reviewing the disclosure of Kawabata et. al. would clearly be taught to prepare binder mixtures containing a silicon/aluminum molar ratio higher than the Silicon/Aluminum ratio in the zeolite and substantially higher than the highest molar ratio permitted in any of the claims of the application. Thus, rejection of the Claims under 35 USC § 103 is also not appropriate.

This difference in Si/Al molar ratio of the silica sol/alumina sol blend is not surprising when the primary purpose of the binder system that is claimed in the Application is compared with the primary purpose of the composition that is disclosed in Kawabata et. al. The object of the composition in Kawabata et. al. was an exhaust gas purifying catalyst "which can remove NO_x through reduction even at the lean side...". While the catalytic

washcoat composition of the Application is also designed to remove NO_x, the primary goal of the applicants when producing the dual sol binder system as disclosed in the Application, is to bind the catalytic material tightly to the monolithic structure for long life. (See page 7, lines 1 - 7.) This enhanced adhesion is desired, even if there may be a reduction in overall NO_x removal.

There is a significant discussion of the applicants' goal within the Application from page 13 through page 17. (Note, that the primary prior art reference discussed on these pages is Japan 1135541, a reference filed by the applicant of Kawabata et. al. on the same day as Kawabata et. al. was filed. The applicant of both of these references failed to appreciate the need for a dual sol binder system with the claimed Si:Al molar ratio.)

1. On page 13, lines 8 - 16, the applicants stated that the inventive dual binder system increased its gel forming capability when compared with prior art binder system where the silica:alumina ratio was 8:1 or greater, such as is disclosed in Kawabata, et. al and JP 1135541.

2. Further, at page 13, lines 16 - 19, the applicants noted that their binder system had less cell clogging problems than binder systems produced from the prior art.

3. In addition, the applicants noted on page 13, line 19 through page 14, line 4, that their dual sol binder system had a significantly higher viscosity than does conventional silica sol or

alumina sol binder.

4. On page 14, lines 5 - 20, the applicants also noted that their dual binder system had better adhesion and was less likely to flake than binder systems where the ratio of the silica sol to the alumina sol was greater than 6:1.

5) Finally, by using the applicants' dual binder system, it was unnecessary to add an additive to the binder system, as discussed at page 14, line 20 through page 15, line 10. In contrast, the dual sol binder systems in both Kawabata et. al. and JP 1135541 required the addition of aluminum nitrate to adjust the pH of the binder system to enhance its ability to act as a binder.

A final difference between the dual sol binder disclosed in Kawabata et. al. and the binder claimed by the applicants is disclosed in the Example in the Application. In that Example the zeolite used by the applicants was copper-ZSM-5 powder provided by Sud-Chemie Nissan Chemicals. The silicon/aluminum molar ratio of this material is about 16. (See attached Exhibit A.) In contrast the silicon/aluminum molar ratio of the dual binder system of the Example was about 3.6:1. Thus, the silicon/aluminum molar ratio of the zeolite of the Example in the Application was over 4 times greater than the ratio of the dual sol binder system that was used. This difference is outside of the ratio disclosed in Kawabata et. al. and certainly outside of the teaching in Kawabata et. al.

Accordingly, the disclosure of Kawabata et. al. does not anticipate any of the claims of the application. Further, because Kawabata, et al., particularly in Table 2, teach that the molar ratios of silicon to aluminum in the sol binder system should be higher than the Si/Al ratio in the zeolite, Kawabata, et al. actually teach away from the composition claimed in the claims of the application.

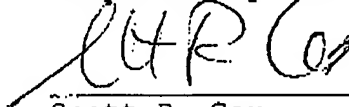
Becue et. al.

The applicants do not believe it is necessary to respond to the rejection based on the Becue, et al. as that patent does not add to the teaching of Kawabata, et al. concerning the blend of the silica sol with the alumina sol in the binder system.

CONCLUSION

The applicants believe that none of the references disclose the application, as claimed, and request that a Notice of Allowance be issued. If there are any questions concerning this response, please contact applicants' counsel.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to Mail Stop Non Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: September 16, 2003Nancy Hunt

SRC:hh:dg
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SUD-CHEMIE
Creating Performance Technology

N-440A (CuZSM-6)

PO Number / SCPI	Quantity / kg	Request No / ISNC BAP	Ex-work / Factory	N-440A (CuZSM-6)		MIZUSAWA EX-122 (ZSM-5)		Analysis Data			
				Lot	Lot No	Lot No	Lot No	Cu %	LOI %	Si/Al ratio	Av. Particle Size (µm)
PT5120062	10	T-63	00.06.28	T-230	711054-120kg	801055-120kg	801056-100kg	3.33	3.15	18.5	
PT40200138	50	T-75	00.07.21	T-230	711054-120kg	801055-120kg	801056-100kg	3.33	3.15	16.5	
PT40200149 Release 1	15	T-87	00.08.17	T-230	711054-120kg	801055-120kg	801056-100kg	3.33	3.15	16.5	
PT40200149 Release 2	35	T-102	00.09.08	D-369	804062-60kg			3.48	3.19	18.4	3.6
PT40200166	200	K436	00.09.21	D-376	804063-100kg	804064-100kg	804065-100kg	3.62	3.19	16.4	3.9
PT40200182 Release 1	300	K505	00.10.31	D-419	804063-100kg	804064-100kg	804065-100kg	3.63	3.38	18.6	3.9
PT40200192 Release 2	200	K505	00.10.31	D-425	804063-100kg	804064-100kg	804065-100kg	3.63	2.85	15.9	3.8
	1000										
				D-427	806071-20kg	806072-120kg	806073-120kg	3.59	2.83	18.2	3.6
				D-	806074-60kg	806075-120kg	806076-120kg			15.9	4.0
				D-	806077-100kg	806078-120kg	806080-100kg			18.0	3.5

EXHIBIT B

